

REMARKS

Upon entry of the above amendment, claims 21 and 29 will have been canceled, claims 16, 22 and 25 will have been amended, and claims 30-39 will have been added. Accordingly, claims 16-18, 22-28 and 30-39 will be pending. Support for the amendment to claim 16 can be found on paragraph [0015] of the instant US published application No. 2005/0054145. Support for new claims 30-39 can be found on paragraphs [0011] – [0014], Figs. 3-4, [0016], [0018] and [0022] of the instant US published application No. 2005/0054145. Reconsideration of the Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

***Rejection Under 35 U.S.C. § 103(a)***

Claims 16, 17, 18 and 21-29 were rejected under 35 U.S.C. §103(a) over Applicant's Admitted Prior Art in view of U.S. Patent No. 6,200,836 to YOO. This rejection is respectfully traversed.

While acknowledging that AAPA lacks, among other things, ion implanting an interstitial element onto the source and drain extension regions, the Examiner nevertheless asserts that YOO teaches this feature and that it would have been obvious to combine the teachings of AAPA and YOO in order to render the claimed invention unpatentable.

Applicants submit that the Examiner has failed to set forth a *prima facie* case of

unpatentability on the basis of the above-noted documents for at least the following reasons:

Applicants acknowledge that YOO discloses implanting oxygen 30 to the regions 16 and 18 in order to form oxide layers 38 and source and drain regions 32 (see Figs. 2 and 3). Nor do Applicants dispute that YOO teaches to use sidewall spacers 33 on the sides of the gate electrode 14 (see Fig. 4). However, in addition to failing to disclose the recited SiGe substrate (col. 3, line 44 of YOO explains only that layer 12 is a gate oxide), Applicants submit that YOO also fails to disclose, or even suggest, ion implanting an interstitial element into the source and drain extension regions to reduce vacancy concentration in the source and drain extension regions and to form low-vacancy regions that substantially overlap the source and drain extension regions.

Applicants emphasize that YOO simply cannot cure the noted deficiencies of AAPA (even assuming the Examiner's characterization of the AAPA is correct - which Applicants' dispute) because it clearly fails to disclose, or even suggest, that the disclosed implanting of oxygen is suggestive of ion implanting an interstitial element into the source and drain extension regions to reduce vacancy concentration in the source and drain extension regions and to form low-vacancy regions that substantially overlap the source and drain extension regions. Applicants note, in particular, that YOO merely discloses the implantation of oxygen in order to form "oxide layers 38 at the interface between the source/drain regions 32 and the surrounding silicon substrate" (see col. 4, lines 31-33 and Figs. 2-3) and not to reduce vacancy concentration in the source and drain extension regions and to form low-vacancy regions that substantially overlap the

source and drain extension regions.

Thus, Applicants submit that no proper combination of these disclosures discloses or suggests at least the features recited in claim 16, and claims 17, 18 and 21-29, which depends therefrom.

Accordingly, Applicants respectfully submit that the rejection under 35 U.S.C. § 103(a) should be withdrawn.

***New Claims are also Allowable***

Applicants submit that the new claims 30-39 are allowable over the applied art of record. Specifically, claims 30-37 depend from claim 16 which is believed to be allowable. Furthermore, claims 38 and 39 recite a combination of features similar to those of claim 16 and are clearly not disclosed or suggested by the applied art of record. Accordingly, Applicants respectfully request consideration of these claims and further request that the above-noted claims be indicated as being allowable.

**CONCLUSION**

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for

P27374.A06

extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 09-0458.

Respectfully submitted,  
Dureseti CHIDAMBARRAO, et al.

A handwritten signature in black ink, appearing to read 'Andrew M. Calderon', written over a horizontal dashed line.

Andrew M. Calderon  
Reg. No. 38,093

March 28, 2006  
GREENBLUM & BERNSTEIN, P.L.C.  
1950 Roland Clarke Place  
Reston, VA 20191  
703-716-1191